



High Intensity LED in ∅ 3 mm Clear Package



DESCRIPTION

This device has been designed to meet the increasing demand for AllnGaP technology.

It is housed in a 3 mm clear plastic package. The small viewing angle of these devices provides a high brightness.

All packing units are categorized in luminous intensity and color groups. That allows users to assemble LEDs with uniform appearance.

FEATURES

- AllnGaP technology
- Standard Ø 3 mm (T-1) package
- Small mechanical tolerances
- · Suitable for DC and high peak current
- · Very small viewing angle
- Very high intensity
- · Luminous intensity color categorized
- Lead (Pb)-free device

APPLICATIONS

- · Status lights
- · OFF/ON indicator
- · Background illumination
- · Readout lights
- · Maintenance lights
- Legend light

PRODUCT GROUP AND PACKAGE DATA

Product group: LEDPackage: 3 mm

Product series: standard
 Angle of half intensity: ± 16°

PARTS TABLE		
PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHE4900	Yellow, I _V > 66 mcd	AllnGaP on GaAs

ABSOLUTE MAXIMUM RATINGS ¹⁾ TLHE4900								
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT				
Reverse voltage		V _R	5	V				
DC Forward current	T _{amb} ≤ 60 °C	I _F	30	mA				
Surge forward current	t _p ≤ 10 μs	I _{FSM}	0.1	Α				
Power dissipation	T _{amb} ≤ 60 °C	P _V	80	mW				
Junction temperature		T _j	100	°C				
Operating temperature range		T _{amb}	- 40 to + 100	°C				
Storage temperature range		T _{stg}	- 55 to + 100	°C				
Soldering temperature	$t \le 5 \text{ s}, 2 \text{ mm from body}$	T _{sd}	260	°C				
Thermal resistance junction/ ambient		R _{thJA}	400	K/W				

Note:

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 $^{^{1)}}$ T_{amb} = 25 °C, unless otherwise specified

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OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLHE4900, YELLOW								
PARAMETER	TEST CONDITION	SYMBOL	MIN	TYP.	MAX	UNIT		
Luminous intensity 2)	I _F = 10 mA	I _V	66	300		mcd		
Dominant wavelength	I _F = 10 mA	λ_{d}	581	588	594	nm		
Peak wavelength	I _F = 10 mA	λ_{p}		590		nm		
Angle of half intensity	I _F = 10 mA	φ		± 16		deg		
Forward voltage	I _F = 20 mA	V _F		1.9	2.6	V		
Reverse voltage	I _R = 10 μA	V _R	5			V		
Junction capacitance	V _R = 0, f = 1 MHz	C _j		15		pF		

Note:

TYPICAL CHARACTERISTICS

T_{amb} = 25 °C, unless otherwise specified

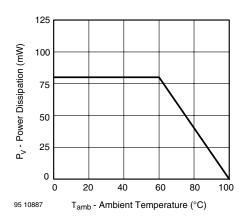


Figure 1. Power Dissipation vs. Ambient Temperature

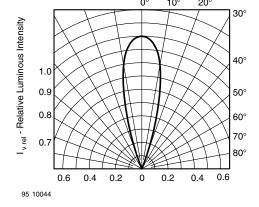


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

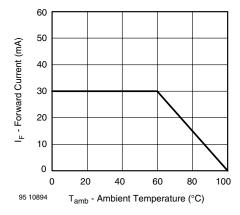


Figure 2. Forward Current vs. Ambient Temperature for InGaN

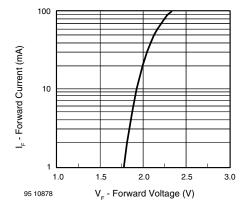


Figure 4. Forward Current vs. Forward Voltage

 $^{^{1)}}$ T_{amb} = 25 $^{\circ}C,$ unless otherwise specified

²⁾ in one packing Unit $I_{Vmin}/I_{Vmax} \le 0.5$



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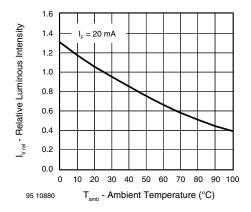


Figure 5. Rel. Luminous Intensity vs. Ambient Temperature

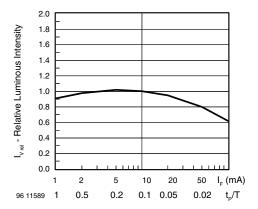


Figure 6. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

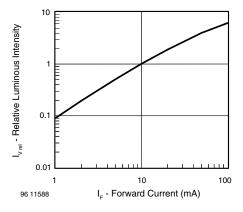


Figure 7. Relative Luminous Intensity vs. Forward Current

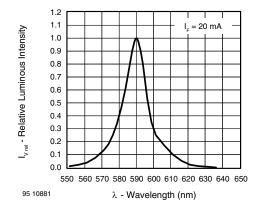
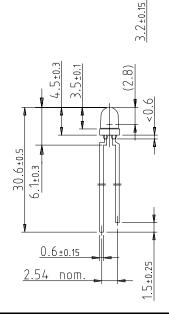
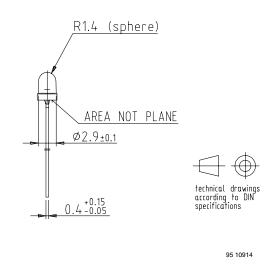


Figure 8. Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters





TLHE4900

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Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

- 1. Meet all present and future national and international statutory requirements.
- Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

- 1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
- Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
- 3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.

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